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JOURNAL

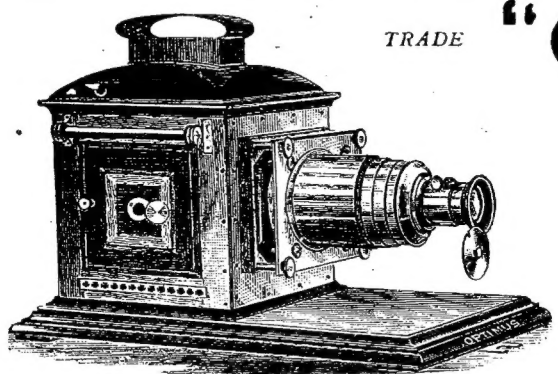
And Photographic Enlarger.
*A Magazine of Popular Science for the Lecture-Room
and the Domestic Circle.*
WITH WHICH IS INCORPORATED THE "LANTERN WORLD."

EDITED BY
J. HAY TAYLOR.

Vol. 12.—No. 142.

MARCH, 1901.

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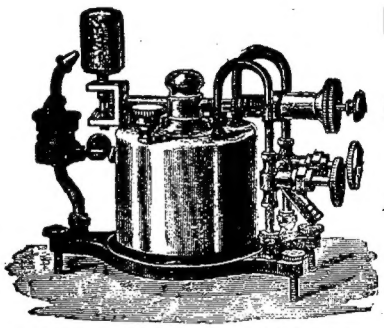
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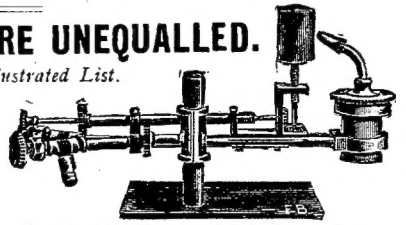
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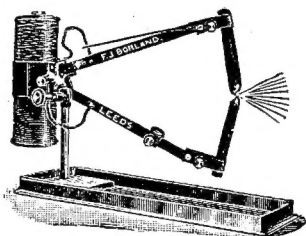
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NOTICES.

The Optical Magic Lantern Journal and Photographic Enlarger is issued on the 1st of every month, price Two Pence, and may be obtained from all Newsvendors, Railway News Stalls, Photographic Dealers, or from the Publishers, at the following rates, post free:—

12 months, 3/-. United States, 75 cents.

EXCHANGE Column, General Wants, &c. (not Trade)—First 20 words, 6d.; and for every 3 additional words, 1d.

SMALL ADVERTISEMENTS must reach the office not later than the first post on the 24th of each month. All cheques and postal orders to be made payable to the Magic Lantern Journal Company, Limited.

EDITORIAL communications must be addressed, **J. HAY TAYLOR**, Advertisements and business communications to **THE MAGIC LANTERN JOURNAL COMPANY, Limited, 9, Carthusian Street, London, E.C.**

American Agents:—The International News Co., 83 and 85, Duane Street, New York City.



Photographic Exhibition in Dublin.—The annual exhibition of photographs in connection with the Photographic Society of Ireland will be held in the large hall of the society, 35, Dawson Street, Dublin, from the 25th to the 30th inst. There will be a special open class for all comers with gold, silver, and bronze medals for the best pictures, any subject or size, produced by any process. The entrance fee is 1s. for each picture. Full particulars will be furnished on application to the secretary, Mr. W. F. Cooper, at the above address.

Business Transfer.—Mr. Robert H. Clark, of Royston, Herts, notifies us as follows:—“Having purchased the old-established lantern slide business of Mr. A. Pumphrey, of Stanhope Street, Birmingham, we propose to amalgamate it with our own and to carry it on at the above address (Royston). We regret any inconvenience that may be caused to the trade by the transfer, but will do our utmost to reduce it to a minimum.”

Glasgow Exhibition.—In our last issue we announced that the exclusive photographic rights had been obtained by Messrs. Annan & Sons. This firm has appointed as their sole London agents Messrs. W. A. Mansell & Co., 405, Oxford Street, W.

* * *

Late of the Royal Polytechnic Institution.

—A correspondent calls our attention to the fact that a great number of lantern exhibitors claim "late of the Royal Polytechnic Institution" after their names, whereas in some instances (he states) the particular exhibitors were not born or at least reached the years of maturity at the time that this institution was given up and devoted to the requirements of a totally different kind to the old days of the "Poly." He quotes one instance of a so-styled exhibitor, and explains that the only connection is as follows:—The exhibitor married a niece of a man who at one time was engaged at the old Polytechnic Institution. The uncle died about 17 years ago, and the marriage with the aforesaid niece took place within the past 12 months. So much for this claim.

* * *

Rational Dress for Women and the Lantern.

—A public entertainment was held on the 25th ult. at St. Martin's Town Hall, Charing Cross Road, W.C., under the auspices of the Rational Dress League. The programme included music and a lecture on rational dress illustrated by a number of lantern slides, including new and old forms, and also several slides depicting accidents and embarrassments incidental to the use of the skirt by women.

* * *

The Röntgen Society's Gold Medal.—The Röntgen Society announce that the president has placed at their disposal a gold medal to be awarded to the maker of the best practical X-ray tube for both photographic and screen work. The competition is open to makers in any country. The jury will be chosen by the president and council of the society, and their names will be announced in the *Times* of March 1st. Tubes intended for competition must be sent in addressed to the Röntgen Society, 20, Hanover Square, London, W., marked "Tube for Competition," the package containing full name and address of sender, and must reach the society not later than May 1st, 1901. Conditions to be obtained on application to F. Harrison Low, M.B., hon. sec., 12, Sinclair Gardens, West Kensington, London, W.

Velox Samples.—Messrs. John J. Griffin & Sons, Limited, of Sardinia Street, W.C., write us as follows:—"For some considerable time we have made a habit of issuing free samples of Velox paper and developer, free of all charge, upon application being made. Experience has shown us, however, that in many cases the small number of pieces of paper we are able to send are not sufficient for a thorough trial and not infrequently dissatisfaction and failure result. Now, therefore, that the qualities are so extensively known we have ceased to issue free samples. In their stead we are issuing sample Velox outfits, comprising 1 packet Velox (carbon), 1 packet M. Q. developer, 1 packet acid hypo., a pad of cotton wool, a Velox manual, bromide of potassium. The outfits are neatly and conveniently packed, and besides their value for trial purposes will be useful to many who require to make only a few prints quickly, and who wish to avoid the trouble of getting out dishes and special solutions. They contain all the materials necessary for making finished prints, and are sold by all dealers.

* * *

Funeral and Proclamation Slides.

—A series of 29 excellent lantern slides, illustrative of the funeral of Her Late Majesty Queen Victoria and the proclamation of King Edward VII., has been issued by Messrs. Newton & Co., 3, Fleet Street, E.C. This firm also publishes 120 slides on the personal history of Queen Victoria.

* * *

Cover Glasses with Clouds, etc.—Clouds added to a lantern slide tend to make it more exquisite than a bare sky, and in order to effect this, Mr. W. D. Welford, of 166, Romford Road, London, E., has introduced at a nominal cost sets of cover glasses on which clouds are printed. These are made in a variety of tones, and merely require to be bound up with a landscape transparency. Mr. Welford has also introduced frames and various designs printed on cover glasses, which enable slide owners to bring their slides out in quite a new and artistic garb.

* * *

Vapour Light for Lantern Illumination.

—Relative to the details of this light which appeared in last issue, we have received a great many letters from readers asking various questions. It is impossible to reply to each correspondent at present, but we are in correspondence with a London firm, and perhaps lamps of this nature may be placed on the market. However, we shall know in time for next issue.

GENERAL ADVERTISEMENTS.

A PROFESSIONAL lanternist and cinematographist of great experience is open to engagements, with or without his own apparatus, in town or country, on very moderate terms. Reference, Editor of this Journal.—Address, Optics, 13, York-street, Walworth, London.

FOR sale, a complete set of bound volumes of THE MAGIC LANTERN JOURNAL, volumes 1 to 10.—Apply at the Office of the Journal, 9, Carthusian-street, E.C.

COLLODION emulsion lantern slides, made from original negatives, photographs, engravings, book illustrations, etc.; for beauty on the screen, no process can touch collodion emulsion.—Dunning, Tynedale, Reigate.

MESSRS. Cadbury Brothers, Limited, of Bourville, near Birmingham, will forward to any lanternist, free of cost, some attractively coloured lantern slides, copied from their striking show cards, to any operator who will undertake to exhibit same at lantern entertainments in his district.

DO you want any colouring, negatives made, slides or effects made? Give us your ideas, and we will work them out; rackworks, chromos, levers, slips, moon-rise and ripple effects, day to night effects, a speciality; advertisement slides, mechanical and otherwise, made; negatives made from 5s., slides made from 4s., colouring from 3s. per doz.—Brett & Green, 23, Bickerton-road, London, N.

EXPERIENCED lantern and cinematograph operator with first-class references, with or without apparatus, on lowest terms; distance no object.—Apply, Bernard G. Watson, 44, Upper Baker-street, London, N.W.

THE entire issue of this "Journal" complete, in bound volumes, 1889 to 1900, inclusive, excellent condition, offers.—Robert Wheeler, Calne.

FOR sale.—Various lantern slides at 4s. 6d. dozen.—25, Bedford-road, Horsham.

SECOND-HAND saturator (Gridiron), only used a few times; 40s.—Apply, Trotter, 23, Gordon-street, Glasgow.

900 SLIDES for sale; stories, comics, effects, slips, geography; hand-painted.—Grant, 40, Whitehall-park, Hornsey-lane, N.

EVENING employment required by young gentleman with good knowledge of photography and lantern work, including operating.—A. E. G., 135, Avondale-square, Old Kent-road.

QUEEN SLIDES.

18 painted, 2 in mourning, the set of 20, 12/6. Special motto, God Save the King, beautifully painted, 1/-. Quantity second-hand slides, 4½d. each, painted. Lists free.

T. T. WING, CHATTERIS, CAMBS.

LANTERN SLIDES

OF THE

Funeral of Her late Majesty Queen Victoria, AND THE Proclamation of King Edward VII.

Most of these Slides are copied by permission of the Proprietors of the "Illustrated London News," from their Original Drawings. The Photographs are from negatives taken by Messrs. Bulbeck and others.

Plain Slides, 1s. each. Beautifully painted, 5s. to 8s. 6d.

- | | |
|--|---|
| 1 The latest Portrait of H.I.M. Queen Victoria (photo). | 19 The Bluejackets marching to the Railway Station at Windsor (photo). |
| 2 Scene in the Mortuary Chapel, Osborne. | 20 The Bluejackets drawing the Gun Carriage from the Railway Station (photo). |
| 3 The Start of the Funeral Procession from Osborne, the King and the Royal Mourners following the Gun Carriage. | 21 The Bluejackets drawing the Gun Carriage in the Quadrangle at Windsor. |
| 4 The Royal Mourners following the Bier on Foot. | 22 The Queen's last journey—the Guards and the Funeral Cortège leaving Windsor for Frogmore. |
| 5 The Procession in Osborne Avenue, Queen Alexandra and the Royal Princesses following on Foot. | 23 "In Memoriam"—The World's Tribute. |
| 6 The Royal Yacht "Alberta" passing through the Solent. | 24 H.I.M. King Edward VII. (photo). |
| 7 The Royal Yacht "Alberta" with the Royal Catalfalque entering Portsmouth Harbour, passing H.M. Training Ship "St. Vincent." | 25 H.M. Queen Alexandra (photo). |
| 8 The King and the Kaiser leaving Victoria Station (photo). | 26 The Proclamation at St. James' Palace. |
| 9 The Crowd at Hyde Park Corner (photo). | 27 " " Temple Bar. |
| 10 The Funeral Procession at Hyde Park Corner, The Massed Bands (photo). | 28 The King in Council, His Majesty subscribing the Oath for the Security of the Church of Scotland, St. James' Palace. |
| 11 " " " Lord Roberts | 29 The National Anthem. |
| 12 " " " The Funeral Car (photo). | 30 Victoria Tower. |
| 13 " " " The King passing by the Gate (photo). | 31 The Robing Room. |
| 14 The Funeral Procession, Panorama of the Royal Procession passing through Hyde Park (slide 6½ in. long, plain 4s. 6d., painted 21s.) | 32 The State Coach passing Henry VII. Chapel. |
| 15 " " " The Funeral Car passing through Hyde Park (photo). | 33 The Royal Gallery. |
| 16 " " " The Foreign Representatives passing through Hyde Park (photo). | 34 King Edward and the Queen passing along the Royal Gallery. |
| 17 " " " The Funeral Car entering Paddington Station (photo). | 35 Interior House of Lords. |
| 18 " " " The King and the Royal Mourners entering Paddington Station (photo). | 36 The Throne. |

A complete series of 120 Slides on "THE PERSONAL HISTORY OF QUEEN VICTORIA," with Descriptive Lecture, will be found on page 390 of our Slide Catalogue.

Sole Makers: NEWTON & CO., 3, Fleet St., London.

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GENERAL ADVERTISEMENTS.—Continued

GRAND new effect sets in the finest miniature work.—“The Hidden Terror,” submarine warfare of the future, Dawn on the ocean, submarine boat sinks into the depths and attacks ironclad, entirely destroying it; new and original movements of a novel character, just invented, a magnificent and thrilling effect in the finest hand work; The Great Fire in Jewin Street, with special mechanical movements invented by E. H. Wilkie, building seen to gradually fall in as the fire progresses; send for lists.—Edmund H. Wilkie, as below.

PARIS Exhibition effects elaborately worked up on nature photographs from Mr. Wilkie's own negatives.—Edmund H. Wilkie, as below.

THE Chateau d'Eau.—This marvellous building by day and night, with illumination by coloured electric glow lamps, the fountains in foreground in full play rising and falling while changing colours, and the great veil of water in background falling by entirely new mechanical movement; realistic and beautiful; one of the finest effects ever invented; send for list.—Edmund H. Wilkie, as below.

THE Luminous Palace (copyright), Old Paris from the river (copyright), the Belgian Pavilion (copyright), Rue des Nations (copyright), and others; all in the highest artistic finish and with new effects.—To be obtained only of Edmund H. Wilkie, as below.

AMAGNIFICENT series of 55 photos of the Paris Exhibition; price 1s. each or 10s. per dozen; send for list.—Edmund H. Wilkie, as below.

BOER War effects, with startling changes in finest work.—Battle of Dundee, Destruction of Boer gun at Ladysmith, Signalling with Ladysmith, Buller crossing the Tugela, Baden-Powell at Mafeking, Surrender of Cronje, An incident on Spion Kop, Triumphant entry of Lord Roberts into Pretoria.—Edmund H. Wilkie, as below.

VICTORIA'S glorious reign, new set; of lasting historic interest, showing all the principal incidents in the life of our late Queen; sixty-six striking pictures, well coloured; price 2s. per slide; send for list, post free.—Edmund H. Wilkie, as below.

VICTORIA'S glorious reign; a beautiful and comprehensive set; the best yet produced.—Edmund H. Wilkie, as below.

IN Memoriam slide, Victoria's reign; a necessity to every exhibitor; well coloured, photographed design, 2s. 6d. post free; produced in the finest miniature work, 18s.—Edmund H. Wilkie, as below.

PHOTOGRAPHS worked up in oil colour, water colour, pure varnish colours, or by the beautiful American process at most reasonable prices; the best work only; slides prepared by photography or hand painting from negatives, drawings, prints from nature, or from written or verbal description; every class of mechanical movement supplied or invented for special purposes; see testimonials.—Edmund H. Wilkie, as below.

NEW list of novelties in effect slides now ready, gratis and post free.—Edmund H. Wilkie, as below.

SPECIAL effects for single lanterns.—Edmund H. Wilkie, as below.

CHINA.—A large selection of views showing the China of to-day, together with scenes from the recent battlefields.—Edmund H. Wilkie, as below.

BARGAINS in second-hand apparatus and slides; send for list; for disposal at less than half cost.—Edmund H. Wilkie, as below.

WONDERFUL genre studies; many prize medals; the finest series of flower studies in existence; beautifully worked up in colours; snow scenes, cloud studies; all in the finest work, at ordinary prices; lists free.—Edmund H. Wilkie, as below.

“SOLAR” mixed gas high-power jet, the ideal lantern jet, the most powerful and perfect jet yet produced for use in single, bi-unial or triple lanterns; used with the greatest success on the great screen at the Crystal Palace; send for illustrated descriptive circular.—Edmund H. Wilkie, as below.

WILKIE'S improved triple and other lanterns, the results of a quarter of a century's practical experience; send for illustrated descriptive pamphlet.—Edmund H. Wilkie, as below.

WILKIE'S “Solar” flint limes are made with the greatest care, are accurately turned and drilled, and composed of selected magnesian limestone; the finest extant; ordinary size 2s. 9d. per dozen, post free; large size, 1½ inches in diameter, a noble lime, per half dozen, 2s. 3d. post free, packed in air-tight tins; lanternists once using these magnificent limes will use no other.—Edmund H. Wilkie, as below.

EDMUND H. WILKIE has been commissioned to dispose of a complete cinematographic outfit of the highest class, consisting of expensively made projector and iron-body lantern attached, with all modern improvements; a series of specially selected films in splendid condition mostly as new, many costing £5; the films will be sold separately if desired; detailed price list post free.—Edmund H. Wilkie, 114, Maygrove-road, West Hampstead, London, N.W.

HIGH-CLASS lantern slide artist; colouring in three styles; satisfaction guaranteed; send for samples.—20, The Broadway, Gleneagle-road, Streatham, S.W.

LANTERNIST and lecturer is open to accept engagement for entertainments; moderate fee.—Mr. Williams, 151, Great Titchfield-street, London.

GRIDIRON saturator, 33s. Manogary bi-unial, brass fronts, roller and revealing curtain, 6 inch lenses, dissolver, mixed jets, case with drawer, good condition; bargain, £7 10s. Lawson's old pattern bi-unial saturator; complete list price, £4 10s.; take 30s.—W. Care, 25, Chapel-street, West Bromwich.

BI-UNIAL lantern, blow-through and mixed jets, dissolver, carriers, curtain effect; not used 12 times; cost £17; price £9; owner has two.—F. T. Carter, Cyrano, Weybridge.

270 LANTERN slides, various British and foreign views; all professional made, in divided boxes; price 50s.—F. T. Carter, Cyrano, Weybridge.

FOR sale, lecturer's outfit.—Bi-unial lantern (nearly new), acetylene generator, two burner jets, dissolver, and 12 feet screen; ready for use; bargain, £12.—Edward Evans, Pontrbydyfen, Glamorgan.

LANTERN slides.—Several hundred, in complete sets, for sale, cheap; printed list free on application.—Boutwood, Kenmore, Hastings.

UP-TO-DATE lantern and slide hiring business for immediate disposal in the Midland Counties; splendid opening; no competition; fullest particulars.—Apply in first place to King, 9, Carthusian-street, Aldersgate-street, London, E.C.

Prominent Men in the Lantern World.

No. XXI.—Mr. R. J. MOSS.

SINCE the advent of acetylene gas for lanterns, Mr. R. J. Moss has made rapid strides in connection with his invention of a good generator, termed "The Abingdon," which is largely used for lantern illumination.

We recently had an interview with Mr. Moss, and attacked him with questions relative to his early lantern experiences, and how he was led into this line.



He explained that lantern work in a commercial sense dated, as far as he was concerned, with the introduction of calcium carbide, but as an amateur he has used the lantern for many years in connection with temperance work. His introduction to the lantern took place several years ago, when he was commercially engaged in the engineering and ironmongery line at Abingdon. Some 20 or more years ago, when the Sunday School Union used to hire out a pair of oil dissolving lanterns, Mr. Moss was one of a set of five who used to operate the lantern—two stationed at either side of the

lantern to attend to the operating, two to hand up and take back the slides in proper rotation, and one to arrange the delivery of the slides in the proper sequence. Mr. Moss soon showed his aptitude in connection with operating, and when a neighbouring school happened to get in a muddle with their lantern one evening, he being looked upon as an authority, was sent for to straighten out matters. Having brought this show to a successful issue, his fame spread abroad, and he soon became lanternist in chief to a Band of Hope. Matters went on slowly in his lantern career, oil lamps being exclusively used, until acetylene was announced in 1895, when he set his faculties to work with the sole intention of benefitting the Band of Hope, and a generator was made. It is interesting to know that although he discarded his first form of generator as being unsatisfactory, because of the irregularity of pressure, a patent for the same principle was some time afterwards taken out by a well-known firm.

After making several models of generators, Mr. Moss perfected one of great reliability and introduced it in January, 1897. Some expert friends of his prevailed upon him to take out a patent and introduce it commercially. In other directions Mr. Moss's brain was at work also, and he devised a screen elevator for opaque screens, a stand to elevate the screen above the heads of an audience, a peculiar style of petroleum reading lamp, an almost silent pneumatic signal, etc. In connection with the "Abingdon" generator a company was formed, with Mr. Moss as manager, but the capital was insufficient, and the directors extra cautious, and never managed during the two years of working to get within weeks of the proper time for delivering machines, and during the 1898-9 season orders for something like 50 apparatus of from 6 to 25 lights were cancelled.

Eventually Mr. Moss took over the business, and removed to his present premises at 98, Snow Hill, Birmingham, where, in addition to the well-known "Abingdon" generator, he has a good stock of generators of various makes, for he has found by experience that it is impossible to make one generator to suit every purpose, whether it be house lighting, town lighting, or light for use in the lantern. Amongst Mr. Moss's latest inventions for the latter are a two and four burner independently controlled jet, a dissolver, purifier, and lastly two new forms of generators which he is about to introduce shortly. The photograph which we reproduce was taken about 4 years ago by the light of his 2-burner lantern jet, and is an excellent likeness.



OF the making of tricks and clever feats, certainly it can be said there is no end. When any new thing comes out that in any way lends itself as an accessory to some remarkable trick, it is certain to be eagerly and immediately seized upon by those whose self-appointed work it is to minister to the wants of those who are always ready to admire and applaud some feat requiring unusual skill and clever manipulation.

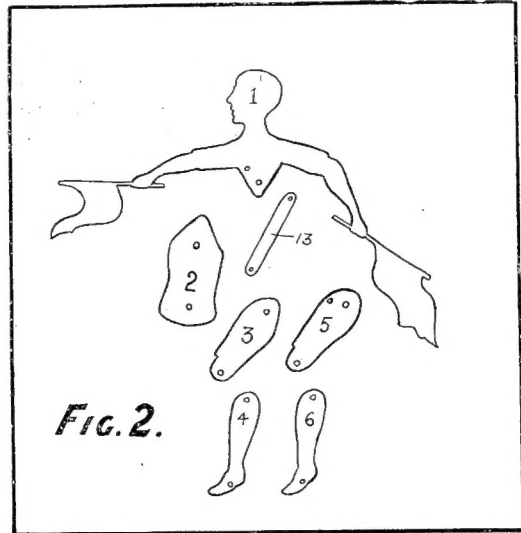
Thus, when the bicycle first came into general use as a means of locomotion, it was at once used for the performance of simple tricks; and as the bicycle has been vastly improved in later years—almost beyond recognition, I might say—so has the number and nature of the clever tricks done by its aid been greatly altered also.

Now, it is quite a common trick amongst those high up in their particular profession to ride a single wheel in almost any position and at greatly varying rates on the stage, and there have not been wanting those who have combined tight-rope performances with these cycle tricks, and ridden their wheels across a suspended rope.

A glance at the illustrated heading to this article will show that one of these performers forms the subject of the present mechanical silhouette slide. The particularly clever nature of the trick here described, and the simplicity with which it has been adapted and represented in a lantern slide, combine to make this slide one of the most effective of the whole series that have appeared in these columns. Without further introduction, I will proceed to the description of this slide.

Seeing that practically the same framework is used in all the mechanical slides described,

slight modifications only being necessary in some few cases, any further remarks about its nature and construction would be quite superfluous. It is sufficient to state that two glasses are employed, one being fixed and the other movable in a groove provided for it. Upon the same side of the sliding glass 7 (Fig. III.) are



glued two small blocks 8 and 9, in the positions shown. (I might here mention that the sliding glass is not represented its full length in this drawing, for the purpose of economising space. It may be made almost any length, of course.)

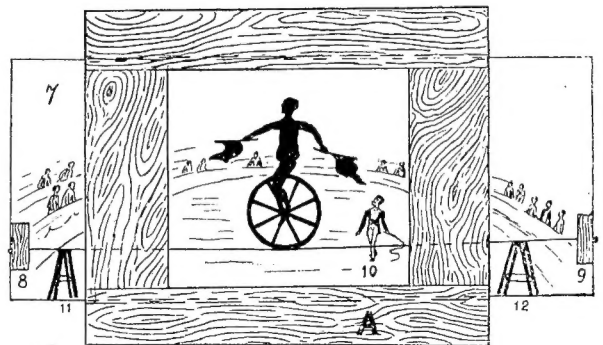


Fig. 3.

Through these two blocks passes a thread, which is wound in its course once round a grooved wheel, which we shall presently have need to refer to in greater detail. The string is secured by means of knots. Upon this glass also are painted figures, as shown, representing the spectators around the ring of the circus,

GENERAL ADVERTISEMENTS.—Continued

MR. W. C. HUGHES, the great specialist in optical projection; over 30 years' experience, and over 20 patents for improvements connected with lantern work; the inventor of the most perfect optical lantern effects extant, which have been supplied to the most eminent amateur and professional exhibitors. Professor Malden, Canon Scott, Dr. H. Grattan-Guinness, Madame Patti, Colin Docwra, Esq., Capt. Charles Reade, R.N., Chevalier, Stuart Cumberland. Hundreds of the Clergy all over the world; also the late Polytechnic, etc., etc.

MR. HUGHES' Docwra Malden and Grand Triples and Bi-unials are superb instruments, and the effects unequalled. The marvellous Pamphengos still holds its own against the commercial productions. Gives beautiful 12 feet pictures. The £6 6s. reduced to £4 4s.; the £4 4s. to £3 10s. If you want a really high-class technical instrument, consult Mr. Hughes; if you want a good cheap lantern or cinematograph, see Mr. Hughes' grand show of instruments, etc., at the show rooms and art gallery, Brewster House, 82, Mortimer-road, Kingsland, North London. A sight to be seen.

MR. HUGHES has produced the grandest mechanical effects ever shown upon a screen. Over 600 to be actually seen in stock, at all prices; the best value in quality and result. Among the most recent are

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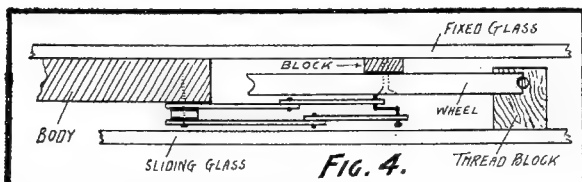
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where the performance is supposed to be taking place. These figures are made somewhat larger near the ends, for the purpose of obtaining the right perspective. 10 is the riding-master, always to be found in the ring when any performance is going on; 11 and 12 are the trestles by means of which the rope is supposed to be suspended. In reality, of course, it is held by the blocks before mentioned.

We will now consider the fitting up of the fixed glass. This holds all the working parts, the wheel upon which the cyclist rides, and the cyclist himself. The component parts of the cyclist are cut out to the shapes shown in Fig. II. All except the body 2 are made of thin metal; 2 is made of thick wood. 1 represents the head and arms, which are in one piece. Flags are held in the hands for the purpose of balancing; 3 and 5 are the thighs and 4 and 6 the lower parts of the legs. 2 is, as we have just intimated, the body. 13 is a link con-



necting, as we shall see, the thigh 5 with the head. The necessary holes must be bored in these parts in the places indicated in Fig. II.

The body 2 is then glued to the inner surface of the fixed glass in its proper position, and the parts just described are pivoted and connected to it, as shown in Fig. V. 1 is pivoted to the body, 3 and 5 are pivoted to the body at the same point, 4 and 6 are pivoted to the ends of 3 and 5 respectively, and the link 13 is pivoted to 1 and 5, as shown.

Now, just below the body of the cyclist, a small block is glued to the fixed glass, as shown in the sectional diagram Fig. IV. In this drawing, as will be seen, only the lower parts of the cyclist's body besides the wheel are shown. To this block is fastened a screw, represented by a dotted line, on which the grooved wheel before-mentioned revolves. This wheel, which is, of course, that upon which the cyclist does his remarkable performance, bears a double crank, as shown in Fig. IV. This double crank passes through the holes made in the cyclist's feet.

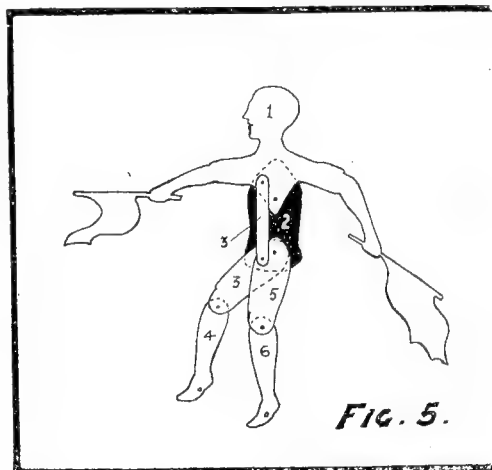
Reference to Fig. IV. will show now the need for the greater thickness of the body. It is necessary in order that the legs—between which, it should be mentioned, there is a small

washer to keep them the proper distance apart—may be on the same level as the double crank on the wheel.

When the slide has been fitted up in the manner described it is completed, and ready for exhibition in the optical lantern. Let us see what happens when the sliding glass is pushed in and out.

Reference being made to Fig. III., it will be seen that if the sliding glass is pushed from left to right, the wheel will revolve in a forward direction. Now, as the wheel revolves, the double crank, with the cyclist's legs attached, revolves too.

It will be easily understood, then (by reference to Fig. IV.), that the cyclist's legs will go



through the ordinary pedalling movements, and owing to the special kind of crank employed, they will cross each other as they would in real cycling. At the same time, the leg 5 and 6 (Fig. V.) moving up and down will, by the agency of the connecting link, cause the head and arms to sway backwards and forwards, in the act of balancing.

The spectators passing by the cyclist in a direction opposite to that in which he appears to be travelling, will make it appear that he is really progressing; and as the spectators will get smaller and smaller until he gets to the middle of the rope, and larger and larger as he gets to his journey's end, it will seem as though he were going through his performance on a rope suspended in the middle of a circus ring. When he arrives at the trestle the operator may, by pulling the sliding glass back again, make the cyclist retrace his steps, or rather, re-ride his wheel across the rope, and thus considerably add to the effect.

Mistakes and How to Correct Them.

By GEORGE KILBURN.

AN important matter in connection with lantern work is the rubber tubing, and as most lanternists use it, any hint given will, I think, be appreciated. My advice to all users of rubber tubing is, do not pack it up with anything that is warm. Of course, most thinking persons would not do so, but one requires help sometimes, and things are often done hurriedly when packing up, and it is then that the damage is done; as I have cause to remember on one occasion when I was out with the lantern.

On using the lantern some time ago at a lecture, the rubber tubing had been packed into the box along with the hot lantern, and when it was being used on the latter occasion it caused no end of trouble, as time after time it cracked, being dry and hard, and allowed the light to go down, which necessitated pieces being cut off and joined with lead tubing, which I had fortunately with me.

Another hint which has been taught me by experience is a photographic one. I was asked to photograph a gentleman's house one day when I was out, the camera being one of my own manufacture. It did not possess a swing back and not much rising front. At the front of the house there was only a small grass plot, and as the camera could not be placed any great distance away, I was obliged to tilt it upwards to get the building on to the plate; with the result that the lines which should be vertical converge above somewhat. Of course, I knew what I was doing, but under the circumstances it was obligatory; and as I knew it could be altered afterwards, took it in the only way I could at the time.

For the benefit of any readers of this Journal who may have negatives of similar subjects and would like to make lantern slides or prints from them, they can easily correct them by copying them in the camera.

The way I adopt is the one described in this Journal April 11th, 1898, viz.:—Place in negative in a suitable box having an opening at each end, and so made that the negative can be fixed at one end and the camera pointing in towards the other open end. To correct the crooked picture the negative must be inclined at an angle until the picture appears correct on the focusing screen. By adopting this method the picture will not appear unsightly when projected on the lantern screen.

All Sorts and Conditions of Lantern Shows.

By THOMAS BYFORD.

POSSIBLY the most difficult audience to please is a village one; the parson and the better class people favour anything religious or scientific, but the rustics revel in humour, and were it continued right through the entertainment they would vote it out and out. A little of each is best for this class audience, and then all will be satisfied.

Vulgarity in every shape and form should be eschewed—there may be some among an audience in favour of it, but if introduced it may afterwards mean the loss of a particular school, and possibly others in the district. Other entertainers would also be debarred; therefore, if only for the sake of others, let everything be strictly refined.

The rector of a large village gave a travelling concert-party permission to use the schoolroom one evening, but it was granted on the strict understanding that nothing in the shape of vulgarity was to be enacted. The concertists were awfully indignant to think that such a thing should have been suggested. Everybody in the village worked very hard to make it a complete success in the shape of a large audience, and their efforts were rewarded, the schoolroom being crowded to excess. The rector and the elite of the neighbourhood were present. The first part of the show was good, in fact splendid, and these people showed in

a variety of ways

what clever instrumentalists and vocalists they were. There were no programmes, so all the numerous acts were sprung on the audience. When the entertainment was rather more than half way through, a young woman in all the glory of the dress indulged in by principal boys in pantomimes, dashed on to the platform and commenced to sing "Two lovely black eyes." The rector rose to protest against this unseemly and uncalled for exhibition, but the rustics roared with laughter and told the pantomime prince to go on. After vainly trying to make himself heard, the rector, followed by several others, left the room. The schoolmaster jumped up and requested the lovely black eye demonstrator to quit the platform, which she very reluctantly did, much to the dissatisfaction of those who had remained behind.

The entertainment—excellent in every way until this silly act was introduced—was brought

to an abrupt conclusion, and so was the concertist's tour in the district.

This school has not been let since to anyone outside the parish; so decent showmen (lantern lecturers included) have to suffer for the faults of others. So much for vulgarity.

Previous to the advent of the cinematograph at the music halls, there were two or three lanternists working these places of amusement in the provinces. The shows were fairly good, one in particular being very much to the fore in lantern manipulation. The slides, artistically speaking, were good; but the selections were bad, and did not evoke much enthusiasm. The class of lantern entertainment likely to be approved of by the proprietors of the various halls is humour in every shape and form. The roars of

laughter and applause

which always greet an artiste of the low comedian type, is sufficient proof that it is appreciated more than the soberly show.

A few years ago a very clever juggler, Trewey by name, introduced at music halls a shadow-graph entertainment which was executed by a clever manipulation of the hands, cardboard diagrams, and other miscellany, which at once jumped into popularity. By-the-bye, this artiste first introduced the cinematograph to a music hall audience at the Empire, Leicester Square, London. It is possible that a show on the same lines, consisting of really laughable silhouette slides, would at once become an established success, both in London and the provinces. There are on the market several silhouette slides, but only a few of these are to be recommended as suitable for music hall audiences. It would be well to consult an adept at making these slides, who would doubtless be able to suggest and make some very excellent subjects. Joe Chamberlain in the effigy of a screw to rapidly revolve—Kruger as the dancing cure—All the Powers pulling a Chinaman's pigtail—Baden-Powell making a Chinese face at three or four Boers—and others of a like nature which an inventive brain would suggest.

The field for this is large; fresh subjects (laughable and political) could be frequently introduced, making this form of entertainment in the course of time quite as popular—if not more so—than the cinematograph. Anyway, it is worth the trying.

Institute shows must be strictly *au fait* to please these very nice but critical audiences. Educational and scientific are the subjects mostly desired. When sending the annual

touting circular to these places, a list of subjects should be enclosed, in order that a selection may be made. This greatly facilitates business, and has resulted in more engagements than has the usual lonesome circular.

Institute members think that a lecturer's life is a glorious one. What can be better they argue than travelling all over the country, pocketing big fees for a two hours' lecture? Possibly it has never dawned on these intellectual minds the discomforts and big expenses there are tacked on to a life among the institutes. Village schoolrooms are far away and beyond these places both for comfort and reimbursement.

Possibly very few people are aware that entertainers are frequently engaged by those in command at lunatic asylums to give entertainments to the patients. The pay is good, and the audiences all that can be desired. They can appreciate any witty remark, also applaud and laugh in the most rational way. To look upon these poor stricken people, so quiet and appreciative, is something to be remembered, and not easily forgotten. The surgeon is the one responsible for the selection of slides, which generally consists of a variety of subjects, the comic element being very much to the fore. Workhouse audiences are also very appreciative, but as these engagements are so few and far between, but little is known about them. If the workhouse be situated in a big city, nothing goes better than coast and inland scenery. Some magnificent views of the beautiful scenery of

Lynton and Lynmouth,

North Devon, were exhibited one afternoon in mid-winter to a workhouse audience in a large city, and the result was surprising. The men applauded vigorously, and some of the women cried like little children. Probably old associations were raked up when gazing on this glorious scenery.

If a lanternist has any respect for his pocket let him steer clear of small towns; they are, financially speaking, useless. Being one-night towns, it means in most cases paying big rents, employing an advance agent, supplying large quantities of printed matter, expensive railway journeys, bill posting, circular distributing, and other incidentals too numerous to mention here. The ridiculous rents asked for some of these halls is beyond the bounds of reason; those who possess them must think that showmen are the biggest fools on earth. As much as two guineas is often asked for a hall in a small town situated right away from anywhere, which

with other expenses would total up to £5 for a one night show. A lanternist, or any other showman, would be a very lucky individual were he to get £5 audiences night after night in such places. Take the advice of one who knows and keep away from small towns.

Penny children shows are at times very remunerative, especially if one has a limelight lantern, and can exhibit on a large scale. The *modus operandi* for a big town would be as follows:—Engage the largest hall to be had, and have some small bills (smaller than the usual handbill) printed relative to the entertainment, and let the admission be one penny for school children and twopence for adults; entertainment to commence at five in the afternoon, and conclude by six. Saturday is the best day. The entertainment should consist of fairy tales, comic stories, rackwork, lever, comic slipping, etc.

Armed with the bills, make a tour of all the schools in the town, and ask the schoolmasters and schoolmistresses to allow you to announce the forthcoming entertainment to the scholars, and distribute the bills as they file out of school or in the playground when at play. It will take two or three people four or five days to properly work a big town. Always have several assistants in attendance to keep the children in order. The teachers of the various schools will, if asked, generally attend. Avoid South of England towns for this particular show. The Midlands and North are best, especially in the coal mining districts. The Rhondda Valley, South Wales, is also a good district. A well-known conjuror had an audience of over 8,000 children in a large circus one Saturday afternoon; between £30 and £40 was taken. Great trees from little acorns spring.



Some Slide Points.

By H. H. WARD.

IT seems really to be the exception in these days of rush to get lantern slides properly finished. Lecturers do not like waiting while the lanternist struggles to find the front of the slides, but they have only themselves to blame, generally, for the delay, which is owing to the lack of indicating spots. Amateur slide makers are not the only sinners in this respect, as quite prominent firms might be named who think it beneath their dignity, apparently, to finish

slides off with spots complete. But the remedy is in the lecturer's own hands.

Take, for instance, a case the writer had a few weeks ago. A firm had made a series of slides for a lecturer (who was not a photographer or slide maker) from a book of plates, showing specimens of the writing of several lost races. At the bottom of each slide, close to the mask, was a very fine line of English type, which was quite invisible in the semi-light of the hall, but perfectly distinct on the screen. The writing looked very much the same any way round, yet no marks of any kind were on the slides to indicate the "way up" or the front. By chance the slides got in right, as was seen by the line of type when on the screen, but it was only chance. When it is added that the slides were exhibited quickly one after the other, the position will be realised, as mistakes would most certainly have been laid at my door.

Surely the white spotting discs are cheap enough, and no special skill or art is necessary to stick them on.

Mine cost me nothing, however, as in my wanderings I came across a tool, like pincers, for cutting large eyelet-holes. All stamp edging is saved, and when I have some quantity, fold it over several times, and then "click" with the tool, and I have plenty of spots ready gummed.

Some masks have spots printed on them. They are very good if the pictures are uniform in size or shape, but sometimes a mask must be

especially made.

If the required mask is to be square or oblong I gum binding strips directly on the picture, taking great care to keep the corners quite square, but the slides must be allowed to dry thoroughly before binding up or disaster may follow when they get into the hot lantern.

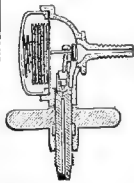
Mountains, trees, and things, or even a portrait, melting and running *up* the screen, are a little surprising and funny to the gravest grown-ups, not to speak of children, and yet I have seen an amateur's slide go off in exactly that way owing to damp.

Small circular masks or ovals I cut with a compass arrangement which has been on the market some time, and which was commented upon in the OPTICAL MAGIC LANTERN JOURNAL some time ago.

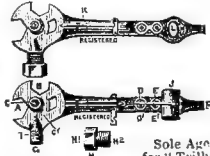
I always have a half pan of Chinese white (moist water-colour) at hand when mounting slides, also an ordinary pen. The colour only requires making into a cream to act as a splendid white ink for writing titles on the masks, but it must not be too thin.



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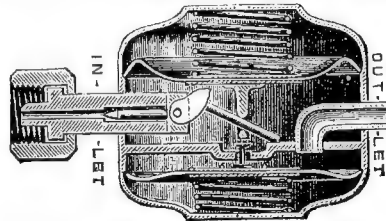
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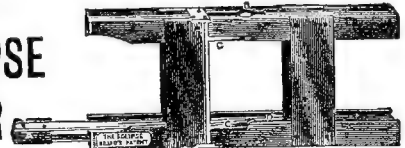
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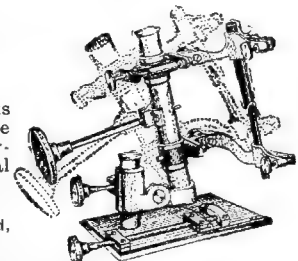
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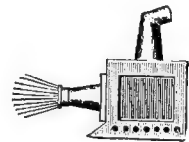


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The spots may also be made with the white "ink," using the round end of a pencil (charged with paint) rubber-stamp fashion on the masks. Both these spots and the stamp edge kind being under the cover glass, cannot meet with accidents and get rubbed or cleaned off.

White-faced masks should be selected carefully, as they are not always light proof with the stronger lights.

Cover glasses do not seem to receive much care in selection, judging from those slides passing through my hands lately. In many cases the picture is marred by bubbles and flaws in the cover and more rarely in the glass of the slide itself. It is, therefore, quite as well to look to these points if the slides are meant for competition or any very particular purpose.

Another little point which frequently escapes attention is to get the masks with straight edges quite parallel with the roofs and walls of any buildings in the scene. If one trimmed a print out of straight it would be noticed at once, but many slides I get are out in this respect, and it is a fault very noticeable on the screen.

Other mask faults, not perhaps so frequently met with, but still too often seen, are jagged edges, pin-holes, circles flattened or ovals not true. Masks should be scanned and faulty ones destroyed at once.

All these points may only seem grumbles, but if the lantern is to keep its place and advance in this critical age, the smallest details must be attended to.



The Optics of Trichromatic Photography.—Part IV.

THE TRAILL TAYLOR MEMORIAL LECTURE.

Continued from page 23.

Cros also proposed both positive and negative synthesis. He at first appeared to accept red, yellow, and blue as the primary colours of light, and described methods of positive synthesis by triple lantern projection, by application of the principle of the zoetrope, by an arrangement of transparent reflectors, and by a prismatic device, employing in each case photographic positives from the original negatives, and red, yellow, and blue lights. For the production of colour prints he said the same negatives could be used, and the prints made in the "antichromatic" colours, "green, violet, and orange." Cros here clearly avoided the mistake of Collen and Du Hauron of trying to record two primaries in each printing negative, and it is remarkable that his printing colours, "green" and "violet" (purple), are just as near to the true printing colours, *minus* red, and *minus* green, as are true blue, and red. Afterwards, in the same article, he expressed the opinion that it might be better to make

the negative by "green, orange, and violet" rays, and the prints in their "antichromatic" colours, "red, blue, and yellow."

Cros did not recognise red, green, and blue as the correct triad of primaries, nor that the "blue," and "red," or "green," and "violet," printing colours should be green-blue and crimson-red. There was no suggestion of anything so definite as analysis by colour-curve screens to be followed by positive synthesis with pure colours.

Cros's suggestions were generally of a somewhat speculative character, and he amusingly disclaimed any wish to submit himself to the "painful" labour which he could foresee would be necessary to arrive at a practical realisation of colour photography by such a system. He said he preferred to show the way, and to claim the credit after somebody else had done all the hard work. By this decision he proved himself to be, from a material point of view, one of the wisest men who ever attacked this problem, and this being his position, he could afford to be somewhat vague—the more so the better; but some of his suggestions now appear wonderfully acute and prophetic, and are worthy of special notice.

For instance, Clerk-Maxwell and Collen both recognised the necessity for colour-sensitive photographic plates in order to practically realise their ideas, and Du Hauron was content to give enormously prolonged exposures so as to utilise the extremely feeble colour sensitiveness of ordinary photographic plates. Cros, who also recognised this difficulty, pointed out that a photographic plate can only be acted upon by light which it absorbs, and said he thought it might be possible to make the plates colour sensitive by incorporating suitable dye-stuffs. In this publication he clearly anticipated the "principle" of "optical sensitisers," as it was afterwards stated by Dr. Vogel, and although he appears to have thought that the mere colouration of the film might serve to make the plates colour-sensitive, it is a remarkable fact that he said a search should be made among a class of dye-stuffs, some of which actually do confer colour sensitiveness to bromide of silver plates!

Cros not only anticipated Du Hauron in the matter of actual publication, but was quite as fertile in original suggestions, and was, I think, more of a scientist, if less of a mechanic, than his rival.

I believe the names of Clerk-Maxwell, Harry Collen, Baron Ransonnet, Louis Ducos Du Hauron, and Charles Cros complete the list of independent inventors of trichromatic photography.

Although Clerk-Maxwell was the first, there is in the original publications of Collen, Du Hauron, and Cros, internal evidence of independent conception of the idea.

Assuming that I have correctly set forth the essential conditions of success in trichromatic photography, and that I have fairly represented the publications of the original inventors, propositions by which I am prepared to stand or fall (I have recently studied the publications of Du Hauron and Cros most carefully), it follows that, brilliant as were the conceptions of these inventors, they failed to recognise requirements essential to success; and I do not hesitate to say that this is the true explanation of the discredit into which this idea had fallen after many attempts to reduce the methods to practice.

Du Hauron and Cros continued to try to perfect and exploit their ideas, but made very little real progress that I have been able to discover, except that Du Hauron made distinct improvements in cameras for making the colour records, and Cros, in 1879 (*The Review of Games, Arts, and Sports*, February 15th, p. 221) had definitely settled upon "orange, green, and violet" as the primary colours of light, and stated that the prints should be

made in pigments which suppress the respective primaries. After nearly 20 years (from the dates of Du Hauron and Cros's publications), although all the materials requisite to experimental success had long been at hand, the principle had not been confirmed by a single really successful result, and was apparently universally discredited.

Meanwhile Dr. H. W. Vogel, in 1835, stated as a "new principle," that the negatives should be made by the same spectrum rays that are absorbed by the printing colours, and in the same proportions—in other words, that the "optical sensitizers," or colours spectroscopically identical with them, should be the printing colours. This was only another way of stating Cros's principle of printing in colours "antichromatic" or complementary to those which produced the negatives.

Dr. Vogel's statement of this "principle" disclosed no recognition of the relation which the negatives or printing colours must bear to the physiological analysis of the spectrum colours, thus missing the most vital point; and it is under no circumstances a true principle in trichromatic photography, but at best involves precisely the same error as the theory that positive synthesis should be effected by screens which transmit all the various rays which have acted to produce the respective photographic "colour curve" records. I hope I have made it clear that the true function of the printing colours is to subtract most efficiently (specifically) from ordinary white light the visual impression belonging to the respective colour elements, and that this is not effected by colours complementary to the correct photographic action. Notwithstanding the errors involved in Dr. Vogel's theory as applied to the trichromatic process (he also proposed a more complex analysis), the weight of his authority caused it to be generally accepted in Europe, and it is still a stumbling-block for many experimenters.

It was the acceptance of this theory that made Von Hübl, in 1838, declare that the Young-Helmholtz colour theory is not a suitable basis for a theory of three-colour printing, and that he could not see in what way it had indicated to me the correct printing colours.* Having no theory to guide him but Vogel's, Von Hübl worked out the details of a method which, assuming that he actually worked to his diagrams (see the *Amateur Photographer*, January 19th, 1884, p. 47), would reproduce the spectrum itself as three broad bands of equal and much diluted colour, with only very narrow spaces of blending between.

Thus does false theory lead to error; and yet this method, which would completely break down upon the spectrum itself, is described in one of the technical journals, nearly six years after the publication of the principle of colour curve analysis, as "enriching our literature on this subject with the clearest exposition of the theory yet propounded!"

Dr. F. Stolze, of Berlin, published a series of articles treating of the theory of trichromatic photography, the dates of which I cannot give, having never seen them in the original. Translations appeared in Anthony's *Photographic Bulletin* in September, October, and November, 1838; but it has been stated that the original publications appeared some years before. Dr. Stolze was probably the first to mention the Young-Helmholtz theory of colour vision in connection with this subject, and to point out that the most that could be expected of a trichromatic process was that it should more or less perfectly counterfeit most of the spectrum hues to the eye by colour mixtures physically different from the original colours.

Dr. Stolze's writings were not reproduced in English, and did not come under my observation until long after I had published similar observations, which he then claimed, very justly I have no doubt, to have in some measure anticipated. He treated of the subject only as applying to the production of colour prints, and did not formulate a definite principle, or recognise the practical bearing of the Maxwell measurements of spectrum colour mixtures, and his conclusions were distinctly antagonistic to hopes of practical success. My own experiments commenced early in the year 1873, and before the end of that year I had at hand all the material means requisite to success, such as perfect colour-sensitive plates, control of the absorption of colour screens, a method of producing half-tone process blocks for carrying out the idea in typographic printing, etc. Nevertheless, my results, even in lantern projections, were crude and discouraging. My theoretical knowledge of the subject was inadequate to discover the sources of error. Like Du Hauron, I gradually improved my results by sheer experience, but I am now perfectly convinced that complete success could never have been achieved by such a process of trial and error.

I became convinced that a quantitative analysis of the various spectrum hues in terms of three spectrum colours must form the basis of a successful method, and stated this principle and the method of its application somewhat clumsily in a paper read before the Franklin Institute in February, 1838.*

My analysis was, however, imperfect, and it was only after some reference to Maxwell's work in spectrum colour analysis which appeared in Rood's "Modern Chromatics" came under my observation, that I was able to perfect my method, and to clearly and perfectly enunciate the principle of colour-curve analysis and pure-colour synthesis, which I did in a paper read before the Franklin Institute in November of the same year.†

The application of this principle resulted in the accurate reproduction to the eye of the colours of the objects photographed—something which I then believed, and still believe, had never before been accomplished, and which probably never would have been accomplished by a trichromatic process without recognition of this principle.

I think I am correct in saying that the soundness of my theoretical exposition of the subject was soon recognised by Dr. Stolze, Victor Schumann, and Sir W. Abney, but that it was actively discredited, though without argument, by almost everybody who had previously become identified with the subject in the public mind.

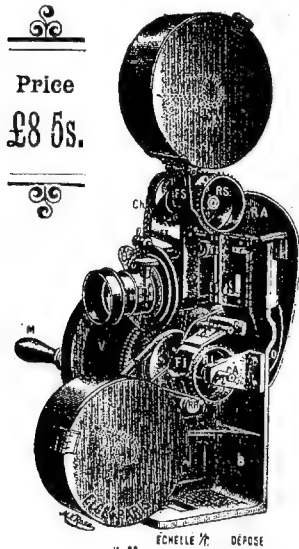
Apparently unanimous condemnation by "practical experts" had the effect of persuading most people that my method must be wrong and my results tricked, and the wheels of progress continued to be clogged by voluminous writings which served chiefly as a negative means of discrediting an important truth.

I mention these facts in explanation of the aggressiveness which I have shown in my fight for recognition of this principle, and which has often been mistaken for a mere ebullition of egotism. I submit that, as a conscientious teacher, I could not do otherwise than maintain that by the application of this principle the problem of recording and reproducing colours by photographic analysis and optical synthesis was finally solved.

This course on my part has been all the more necessary because in some pretentious treatises, such as that of Alcide Ducos Du Hauron, published in Paris as recently as in 1897, the principle of colour-curve analysis, to be

* *Journal of the Franklin Institute*, Philadelphia, May, 1838.

† *Journal of the Franklin Institute*, Philadelphia, January, 1838, p. 55.



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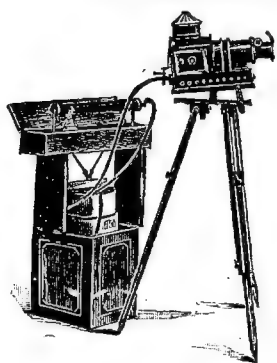
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- G. H. ELLIOTT, Esq., of West End, writes Nov. 13th, 1899:—"With regard to the 'Rilford,' all I can say is, it is simply splendid, and I cannot speak too highly of it. It thoroughly deserves everything that has been said in its favour, and more too. Not only is the light most brilliant and steady, but the regular and unflinching supply of gas, the automatic action, and absolute safety of the apparatus give one the confidence which one doesn't often feel when working other appliances."

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- ANOTHER CLERGYMAN, who does not wish us to publish his name, but who will answer any questions by letter (name and address to be obtained from us), writes June 27th, 1900:—"I send you an account of a case of Pneumonia, in which the 'Rilford' was used with much success. The case in point was that of a boy aged twelve. Pneumonia showed itself on May 22nd. On May 25th oxygen was first used, a cylinder being obtained from the Cottage Hospital, where one is always kept ready. On Sunday, May 27th, this gave out, and as there was on that day no possibility of getting another cylinder, my 'Rilford' was taken down, and first used at 8.30 p.m. From 10 p.m. to 7 a.m. oxygen was at first administered every 45 minutes, then every hour, with the result that the boy, whose case seemed almost hopeless at 10 p.m., was decidedly better. The improvement continued, the 'Rilford' being used at longer intervals during the 29th and the nights of the 28th and 29th. The boy is now convalescent, and in the Isle of Wight. I think, humanly speaking, the presence of a 'Rilford' in the village saved his life."

The Originals of these and many other Testimonials may be seen here.

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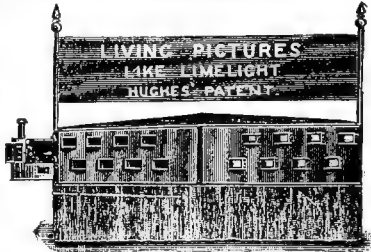
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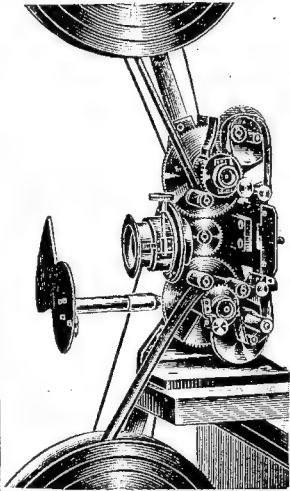


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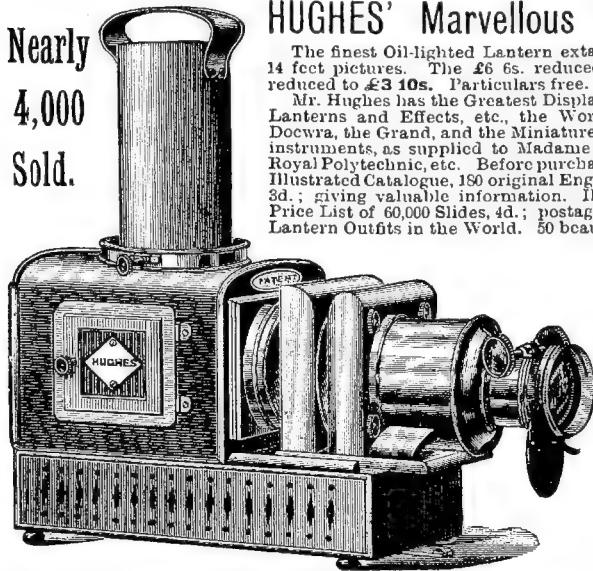
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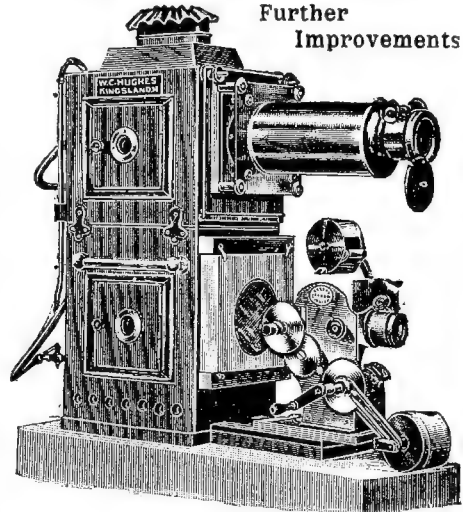


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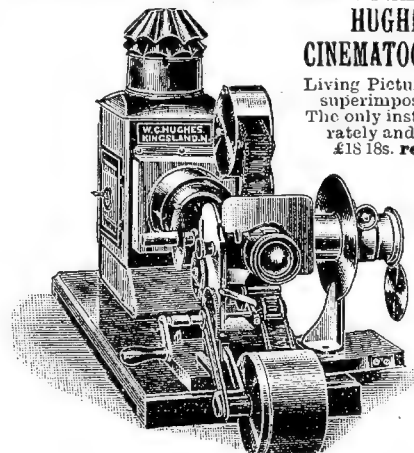


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followed by pure-colour synthesis, is not even stated, and the principle of analysis is no more definitely stated than that the negatives should be made by "orange," "green," and "violet" light; and in the "melanochroscope" credited to Louis Ducos Du Hauron, and only recently manufactured for sale, the photographs are supposed to be made through the same screens that are used for synthesis. Such loose methods may serve as playthings, but they no more represent scientific trichromatic photography than a child's use of a sixpenny prism represents the science of spectrum analysis.

Since this part of my lecture was in manuscript I have had the great pleasure of perusing a treatise on trichromatic photography by an English author, who has not only recognised the principle of colour-curve analysis and pure colour synthesis, but has presented the subject in a most admirable manner. No doubt many who have found my own essays too concise and dogmatic in style to appeal to them successfully will find Mr. Tallent's fuller arguments and illustrations sufficiently convincing. It needed only the publication of such a treatise as this to put a period to my aggressiveness in a fight which has become distasteful to me.

(To be continued.)



PATENT INTELLIGENCE.

The following List, relating to current Patent Applications, is compiled expressly for the "Optical Magic Lantern Journal" by W. P. Thompson & Co., Patent Agents, of 322, High Holborn, London, W.C., to whom all enquiries for further information should be addressed.

- | No. | RECENT PATENT APPLICATIONS. |
|--------|--|
| 20933. | 19th November, 1900. Emil Donitz. Improvements in photographic shutters. |
| 20938. | 20th November, 1900. Wilhelm Peisker, Fritz Schlomka, and Hermann Kautz. Improvements in or applicable to the diaphragms or membranes of phonographs and the like instruments. (Complete.) |
| 21034. | 21st November, 1900. Frank West Suter. Apparatus for printing photographs from negatives. |
| 21185. | 23rd November, 1900. John Colquhoun Manifold. An improved stereoscopic device. |
| 21239. | 23rd November, 1900. Edward Sanger Shepherd. Improvements in or relating to photographic cameras. |
| 21279. | 19th November, 1900. Alfred Charles Jackson. Improvements in and relating to hand cameras. (Complete.) |
| 21339. | 26th November, 1900. Henry William Hamblin Palmer. Improvements in apparatus for photographing and exhibiting cinematograph and mutoscope ordinary pictures. |
| 21495. | 27th November, 1900. Edwin A. Reeves. Improvements in coin-freed apparatus for producing sounds and exhibiting pictures. (Complete.) |
| 21537. | 28th November, 1900. Arthur Salmon. Improvements in or relating to photographic apparatus. |

- | | |
|--------|--|
| 21545. | 28th November, 1900. Leon Gaumont. Improvements relating to cinematographs. |
| 21594. | 29th November, 1900. Arthur Lewis Adams. Improvements in denoting speeds of photographic shutters. |
| 21711. | 30th November, 1900. Edward Bethell Fox. An improved photographic developing dish. |
| 21817. | 1st December, 1900. Birt Acres. A process for photographing in colour. |
| 21840. | 3rd December, 1900. Allan Coats, jun. An improved method of ascertaining when the sensitised plate or film of a camera is in focus. |
| 21848. | 3rd December, 1900. John Archibald Purves and William Thompson Purves. An improved form of optical apparatus for use in lighthouses and the like. |
| 22055. | 5th December, 1900. Frank Edward Hampton. Improvements in and relating to photograph frames. |
| 22200. | 6th December, 1900. Napoleon Conti. Improvements relating to photographic cameras. (Date applied for under Patents, etc., etc., 1883, Sec. 103; 9th May, 1900, being date of application in France.) |
| 22697. | 12th December, 1900. Hans Löscher. Improvements in photographic copying machines. |
| 22849. | 14th December, 1900. Albert Martin William Lehfeldt. An improved apparatus for interchangeably exhibiting pictures, photographs, and advertisements. |
| 22971. | 15th December, 1900. Philip James Job and Thomas Naylor. A new or improved apparatus for changing photographic plates or cut films. |
| 22981. | 15th December, 1900. George William Brown and George Robson Beaumont. Improvements in and connected with kinematographs and magic lanterns. (Complete.) |
| 23121. | 18th December, 1900. Percival Warwick Davies. Improvements in apparatus for obtaining and projecting animated pictures. |
| 23330. | 18th December, 1900. George Frederick Hatton. Improvements in apparatus for taking and viewing or exhibiting cinematographic pictures. |
| 53. | 1st January, 1901. Thomas William Henry. New and improved photo-mechanical methods and means for producing curved printing plates and rollers. |
| 296. | 4th January, 1901. Charles Henry Watson. Photographic enlarger. |
| 1139. | 17th January, 1901. Jules Carpentier. Improvements in enlarging or like cameras. |
| 1183. | 18th January, 1901. Edward Townshend Driffield. Improvements in photographic cameras adapted to take panoramic views. |
| 1690. | 24th January, 1901. Raymond Camille Marie de Bercegol. Improvements in photographic apparatus or cameras and to means for loading or charging the same with sensitised plates and films in daylight. |
| 1818. | 26th January, 1901. William John McConnell. Improvements in and relating to photography. |
| 2147. | 31st January, 1901. John Howard Ross. Improved gas burner adapted chiefly for acetylene for magic lantern or other use where a powerful concentration of light is required. |

2152. 31st January, 1901. Ian Robertson. Improvements in the method of projecting coloured lights and for imperceptible changes from one coloured light to another for stage purposes and otherwise.
2456. 5th February, 1901. Henry William Hamblin Palmer. Improvements in mechanism employed in the production and reproduction of a series of photographic pictures.

Copies of the following specifications may be obtained by remitting 1/- for each specification to W. P. Thompson & Co., Patent Agents, 322, High Holborn, London, W.C.

SPECIFICATIONS PUBLISHED.

- 17 of 1900. Wallis and Wallis. Envelopes and holders for sensitive photographic plates.
- 1530 of 1900. Vickers and Rumsey. Apparatus for photo printing and developing.
- 16075 of 1900. Hagey. Exposure scales for use by photographers.
- 17366 of 1900. Adt. Eye-glasses.
- 19547 of 1900. Goodson. Chimney raising appliances for lamps and stoves.
- 23 of 1900. Edmundson. Apparatus for the production of acetylene gas for street lamps, gate posts, carriage and ordinary illumination.

Notes and Queries.

Correspondents must supply their names and addresses, but, if desired, queries can be replied to under a "nom de plume."

Clement & Gilmer.—A few months ago we had a somewhat similar letter from the United States. Projection on the clouds is a rather tall order. Some clouds are much nearer the earth than others, and in striking an average distance it will be about 4,000 feet; but as the distance is never constant, I am afraid you will find it a hopeless task. However, taking matters at 4,000 feet, this distance can be experimented with by trying a projection on some building at such distance from the lantern. In order to see a projection at this distance the disc would, we presume, require to be about 100 feet at least. With an ordinary sized slide a lens of about 10 feet focus would be required, but given the size of slide you intend using, the distance that the screen it to be away, and the size of disc required, the necessary focus of lens can be ascertained as follows:—Multiply the distance between lantern and screen by the size of the opening of slide, and divide by the size of disc. Much of the light would pass through a cloud, and only a small percentage reflected; consequently, with regard to the light, you cannot have it too powerful.

J. S. McCulloch.—We thank you for the tickets for the Edinburgh Photographic Exhibition.

H. Andrews writes:—With regard to the query in last issue by "Photophil," he may be interested in the following quotation from page 304 of Mr. Lewis Wright's book on "Optical Projection":—"Ammoniated copper gives a fair blue, but a much better plan is that discovered by Mr. H. G. Madan, of superposing Chance's signal green which stops all red on a rich cobalt-blue glass which transmits little but red and blue. The two only transmit

rays between the F and G. In all colour experiments it has to be remembered that deeper tints are needed in proportion to the brilliancy of the light used in the lantern.

N. Pachovsky.—(1) Write to Messrs. Newton & Co., 3, Fleet Street, London, E.C., for particulars of the microscopic attachment for lanterns. (2) There may or may not be lantern goods exhibited at the forthcoming Glasgow Exhibition, but it is certainly not intended solely for the exhibition of lantern goods as you seem to imagine. We will endeavour to supply the information about the lamp in next issue.

R. P. says:—I am only a beginner with the lantern so please excuse my question which to you, as an expert, may seem frivolous, but to me my trouble is vexatious. The trouble is that I can only get a small brightly illuminated circle of light with my lantern; the circle certainly continues to the required size but is somewhat dark beyond the bright patch alluded to. Can you suggest anything to overcome the difficulty? I have written to the makers, but they only say that the apparatus was right when they sent it off and that if I want them to look at it again I must return it and pay freight both way. *Ans.*—The remedy is a simple one. Place the light a little nearer to the condenser. If matters are not amended thereby write us again.

Edgar Oates.—(1) We are afraid that if you introduce dissolving views and the cinematograph, using acetylene gas only, in conjunction with your conjuring entertainment, you will spoil the whole show. Acetylene is not powerful enough for your purpose. (2) The arrangement of a cinematograph projector attached to the lower lantern, and Beard's carrier at the top will answer. (3) It is quite possible to project the slides from the top lantern of the same size as the cinematographic pictures projected from the lower lantern. If you tell us the distance between the lantern and screen, and the size you want the picture to be, we can let you know what focus of lens to employ in the top lantern for projecting ordinary slides to occupy the same size on screen as your cinematograph pictures. (4) In our next.

W. H. Young.—Thanks for book. In our next.

W. Carter.—The light spoken of was never commercially introduced. The apparatus consisted of a species of pump, which increased the pressure of the house gas before it reached a small burner furnished with an incandescent mantle.

Correspondence.

LANTERN STANDS.

To Mr. J. Hay Taylor, Editor.

SIR,—Referring to your Journal last month as to rickety lantern stands ("A Hint to Many Photographic Societies"), it is strange to me that no one has revived the very firm iron stand designed by Francis, of Museum Street, many years ago. I have had one for over 30 years. It is a most useful stand, firm and simple in construction. At a cost of about 25s. it could be made by any iron founder.

As a lantern stand in a hall or schoolroom it is perfect, no fear of its being upset, firm and rigid, no shaking being possible, takes up little space, and has every movement for adjustments, etc.

Yours, etc.,

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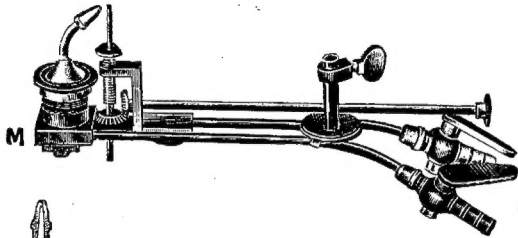
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